

**In the United States District Court
Western District of Missouri**

RURAL COMMUNITY WORKERS ALLIANCE
and JANE DOE,

Plaintiffs,

v.

SMITHFIELD FOODS, INC. and SMITHFIELD
FRESH MEATS CORP.,

Defendants.

Declaration of David Michaels, PhD, MPH

I, David Michaels, declare as follows:

1. I am currently a Professor of Environmental and Occupational Health at the Milken Institute School of Public Health of the George Washington University, in Washington, D.C.
2. I am an epidemiologist with expertise in the study and prevention of occupational injuries and illnesses.
3. From 2009 until January 2017, I served as Assistant Secretary for the Occupational Safety and Health Administration (“OSHA”) of the U.S. Department of Labor, the longest serving Administrator in OSHA’s history.
4. In addition, from 1998 to 2001, I served as Assistant Secretary of Energy for Environment, Safety and Health.
5. I have published studies on work-related injuries and illnesses in numerous peer-reviewed scientific publications, and I have received numerous awards and recognition for my work. I have served or currently serve on international panels

addressing occupational safety and health, including ones focused on the collection and disclosure of work-related injury and illness data.

6. My complete, current CV is attached as Exhibit A.

7. The following draws from my experience at OSHA and an expert on occupational safety and health regulation. Since the beginning of the COVID-19 pandemic, I have been closely monitoring OSHA's activity – or lack thereof – as part of my academic work.

8. OSHA has limited tools to protect workers at slaughterhouses and meatpacking plants during the COVID-19 pandemic, including Defendants "Smithfield." Based on my observation, throughout this crisis—dating back more than three months—OSHA has failed to enforce any of its limited requirements that could conceivably protect meatpacking workers from illness. And, OSHA is not authorized to cite employers who fail to protect members of the community from infectious disease. In my expert opinion, OSHA has been missing in action during the pandemic.

9. The Occupational Safety & Health Act imposes two enforceable duties on employers. Employers are required to comply with OSHA standards. 29 USC § 654(a)(2). And, employers are required to comply with the OSH Act's general duty clause which requires employers to provide their employees "with employment and places of employment free from recognized hazards." 29 USC § 654(a)(1).

10. OSHA has not adopted a specific standard that protects employees from the risk of infectious diseases like COVID-19. Existing OSHA regulations, such as those governing sanitation, and personal protective equipment, 29 CFR §§1910.132,134, require minimal effort by employers. Under these regulations, employers are left to

identify which “hazards” require protection. On April 26, OSHA issued guidance advising employers in the meatpacking industry on how these regulations apply during the current pandemic. Such guidance is not binding.

11. When OSHA has not issued a standard regulating a hazard, it may rely on the general duty clause to protect employees from “recognized hazards.” General duty clause citations require a higher degree of proof than do citations alleging violations of OSHA standards, are resource intensive for OSHA to document and justify, and have little effect on improving workplaces generally. OSHA has not issued any such citations to protect against the novel coronavirus causing COVID-19.

12. Moreover, while OSHA could announce its intent to cite employers for failure to follow that guidance, it has not done so. In other words, parroting CDC, OSHA, has made *recommendations* regarding how meat packing plants should operate, but those statements, including the one issued April 26, 2020, are *voluntary*. OSHA has not indicated that it will cite employers who fail to comply with its recommendations.

13. Instead, OSHA has issued guidance advising its inspectors to exercise “enforcement discretion” when addressing complaints relating to COVID-19. <https://www.osha.gov/memos/2020-04-13/interim-enforcement-response-plan-coronavirus-disease-2019-covid-19> Based on my years of experience with the agency and Department of Labor, I interpret this guidance to mean that OSHA will not cite employers in the meat industry for violations of the OSH Act relating to COVID 19 risks.

14. OSHA’s guidance indicates that it likely will not even conduct inspections in “medium” risk facilities, such as meatpacking plants. Instead, OSHA’s guidance indicates that when they learn of potentially hazardous conditions in a meatpacking plant,

they will send a letter to the employer seeking information. Such inquiries are informal, they do not require an employer to take action to abate hazards, and do not lead to citations. In other words, informal letters from OSHA do not impose an enforceable duty on an employer.

15. If OSHA determines that an employer's response to its informal inquiry is not adequate, OSHA may initiate an on-site inspection.

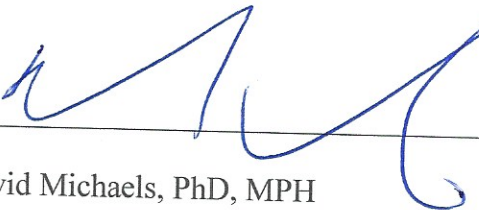
<https://www.osha.gov/memos/2020-04-13/interim-enforcement-response-plan-coronavirus-disease-2019-covid-19>. Under existing OSHA procedures, OSHA will not cite an employer without an on-site inspection.

16. Furthermore, OSHA citations are not issued immediately after an inspection is completed. In the case of COVID 19, OSHA has advised its area offices that any proposed citations must be reviewed in the National Office before being issued. *Id.* In my experience, such National office review makes it far less likely that citations will be issued – even if OSHA finds that an employer is exposing its workers to serious risk of contracting COVID-19 – for several months at least.

17. Even if OSHA were to issue a citation several months from now, under the OSH Act an employer has no duty to abate the hazards OSHA has identified until a final order of the Occupational Safety & Health Review Commission issues. 29 U.S.C. §659(b). Such a final order is deemed to have been issued 15 days after OSHA issues a citation if the employer does not contest it. However, if the employer contests the citations, an employer has no duty to abate the hazard OSHA has cited until proceedings before OSHRC have concluded. In my experience, OSHRC proceedings usually delay abatement for several years, at least.

18. Under section 13 of the OSH Act, OSHA has the authority to file suit in federal court to enjoin an imminent danger. During my tenure as the head of OSHA, the Agency did not file any imminent danger suits. To the best of my knowledge, OSHA has not filed such an action since the mid-1990s. Further still, OSHA procedures require that the Agency conduct an inspection prior to filing an imminent danger suit. I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

I declare under penalty of perjury that the foregoing is true to the best of my knowledge



David Michaels, PhD, MPH

EXHIBIT A

DAVID MICHAELS PhD, MPH
6843 Tulip Hill Terrace
Bethesda, MD 20816
drdavidmichaels@gmail.com

PROFESSIONAL EMPLOYMENT AND APPOINTMENTS

Current Employment and Academic Appointment

The Milken Institute School of Public Health of George Washington University	
Department of Environmental and Occupational Health	
Professor	2009-present
Vice-Chair for Education	2019-present
Interim Chairman	2008-2009
Associate Chairman	2004-2008
Research Professor	2001-2009
Department of Epidemiology	
Professor	2017-present

Previous Employment and Primary Academic Appointments

The United States Department of Labor	
Assistant Secretary for Occupational Safety and Health	2009-2017
The United States Department of Energy	
Assistant Secretary for Environment, Safety and Health	1998-2001
The City University of New York Medical School	
Department of Community Health and Social Medicine	
Professor	1996-2001
Acting Chairperson	1992, 1996-7
Associate Professor	1990-1995
Montefiore Medical Center/Albert Einstein College of Medicine	
Department of Epidemiology and Social Medicine	
Director, Division of Public Health	1988-1990
Director, Program in Occupational Health	1981-1988
Curriculum Coordinator	1979-1981
Research Associate	1977-1979

Additional Academic Appointments

The Icahn School of Medicine at Mount Sinai
Department of Environmental Medicine and Public Health

Adjunct Professor	2001-present
Adjunct Associate Professor	1993-2000
The Albert Einstein College of Medicine	
Department of Epidemiology and Population Health	
Visiting Associate Professor	1991-2008
Associate Professor	1990-1991
Assistant Professor	1981-1990
Instructor	1980-1981

EDUCATION

The City College of New York	1977 BA	History (<u>cum laude</u>)
Columbia University	1981 MPH	Epidemiology
	1987 PhD	Sociomedical Sciences

ADDITIONAL POST-GRADUATE TRAINING

Quantitative Methods in Cancer Epidemiology. The International Agency for Research on Cancer, Lyon, France, 1985.

FELLOWSHIPS AND RESIDENCIES

World Health Organization Travel Fellowship, 1992
 Robert Wood Johnson Foundation Health Policy Fellowship, Washington, DC 1993-1994
 Rockefeller Foundation Bellagio Center Residency, Bellagio, Italy 2018

AWARDS, HONORS & ELECTED MEMBERSHIPS

Jay S. Drotman Memorial Award, American Public Health Association, 1984
 Bicentary Keynote Lecturer, Sydney Hospital, Sydney, Australia, 1988
 Samuel Gompers Award, International Assoc. of Industrial Accident Boards & Commissions, 2000
 National Academy of Social Insurance, 2000-2009, 2017-Present
 Meritorious Service Award, United States Department of Energy, 2001
 Honorary Kentucky Colonel, 2001
 Honorary Duke of Paducah (Kentucky), 2001
 David P. Rall Award for Advocacy in Public Health, American Public Health Association, 2001
 Collegium Ramazzini (Fellow), 2003-2009, 2017-present
 Scientific Freedom and Responsibility Award, American Association for the Advancement of Science, 2005
 Delta Omega (Honorary Society in Public Health), 2007-present
 John P. McGovern Science and Society Award, Sigma Xi, 2009
 Environmental Hero of the Year, Environmental Relief Center, 2009

ASPH/Pfizer Public Health Academy of Distinguished Teachers, 2009-present
 Jeffrey S. Lee Lecture, American Industrial Hygiene Conference, Toronto, Canada, 2009
 Robert Wood Johnson Health Policy Fellowship Program, Lifetime Achievement Award, 2010
 Isidore I. Benrubi Lecture, Columbia University School of Public Health, 2010
 Clara Lemlich Public Service Award, Triangle Shirtwaist Factory Fire Memorial, 2011
 Allan Rosenfield Alumni Award for Excellence, Columbia Univ. School of Public Health, 2012
 Inaugural Cancer and Society Lecture, International Agency for Research on Cancer, Lyon, France, 2012
 John T. Dunlop Memorial Forum, Harvard Law School, 2013
 William Steiger Memorial Award, American Conference of Governmental Industrial Hygienists (ACGIH), 2013
 Paul Robeson Award, District 1199C American Federation of State, County and Municipal Employees, 2013
 Jorma Rantanen Award, Finnish Institute of Occupational Health, Helsinki, Finland, 2013
 J. William Lloyd Award, United Steelworkers, 2018
 William D. Wagner Award, American Conference of Governmental Industrial Hygienists (ACGIH), 2018

ORIGINAL COMMUNICATIONS

1. Velasquez E, Hassan A, Belmar R, Drucker E, Michaels D. Inorganic Mercury Poisoning- Nicaragua. MMWR 29:393, 1980.
2. Hassan A, Velasquez E, Belmar R, Coye M, Drucker E, Landrigan P, Michaels D, Sidel K. Mercury Poisoning in Nicaragua. A Case Study of Environmental and Occupational Health Hazards by a Multinational Corporation. Int J Health Serv 11:221-226, 1981.
3. Michaels D. Occupational Cancer in the Black Population. The Health Effects of Job Discrimination. J Nat Med Ass 75:1014-1018, 1983.
4. Michaels D, Nagin D, Zoloth S. Occupational Hazards in the Dental Office. NY State Dent J 50:294-297, 1984.
5. Michaels D, Barrera C, Gacharna MG. Economic Development and Occupational Health in Latin America. New Directions for Public Health in Less Developed Countries. Amer J Pub Health 75:536-542, 1985.
6. Zoloth S, Michaels D. Asbestos Disease in Sheet Metal Workers. The Results of a Proportional Mortality Analysis. Amer J Ind Med 7:315-321, 1985.
7. Zoloth SR, Michaels DM, Villalbi JR, Lacher M. Patterns of Mortality among Commercial Pressmen. J Nat Cancer Inst 76:1047-1051, 1986.

8. Zoloth S, Michaels D, Lacher M, Nagin D, Drucker E. Asbestos Disease Screening by Non-Specialists. The Results of an Evaluation. *Amer J Pub Health* 76:1392-1395, 1986.
9. Michaels D, Zoloth S, Lacher M, Holstein E, Lilis R, Drucker E. Asbestos Disease in Sheet Metal Workers II. Radiologic Signs of Asbestosis among Active Workers. *Amer J Ind Med* 12:595-603, 1987.
10. Drucker E, Michaels D, Nagin D, Zoloth S. Exposure of Sheet Metal Workers to Asbestos during Construction and Renovation of Commercial Buildings in New York City. A Case Study in Social Medicine. *Ann NY Acad Sci* 502:230-244, 1987.
11. Michaels D, Zoloth S. Asbestos Disease in Sheet Metal Workers. Proportional Mortality Update. *Amer J Ind Med* 13:731-734, 1988.
12. Michaels D. Waiting for the Body Count. Corporate Decision Making and Bladder Cancer in the U.S. Dye Industry. *Med Anthro Q* 2:215-232, 1988.
13. Solet D, Zoloth S, Sullivan C, Jewett J, Michaels D. Patterns of Mortality in Pulp and Paper Workers. *J Occup Med* 31:627-630, 1989.
14. Alcabes P, Vossenas P, Cohen R, Braslow C, Michaels D, Zoloth S. Compliance with Isoniazid Prophylaxis in Jail. *Amer Rev Resp Dis* 140:1194-1197, 1989.
15. Shenson D, Dubler N, Michaels D. Jails and Prisons. The New Asylums? *Amer J Pub Health* 80:655-656, 1990.
16. Michaels D, Zoloth S. Mortality among Urban Bus Drivers. *Int J Epidem* 20:399-404, 1991.
17. Michaels D, Zoloth S, Stern FB. Does Low-Level Lead Exposure Increase Risk of Death? A Mortality Study of Newspaper Printers. *Int J Epidem* 20:978-983, 1991.
18. Welch LS, Michaels D, Zoloth S. Asbestos-Related Disease among Sheet Metal Workers: Preliminary Results of the National Sheet Metal Worker Asbestos Disease Screening Program. *Ann NY Acad Sci* 643:287-295, 1991.
19. Michaels D, Zoloth S, Alcabes A, Braslow C, Safyer S. Homelessness and Indicators of Mental Illness among Inmates in New York City's Correctional System. *Hospital and Community Psychiatry* 43:150-155, 1992.
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21. Michaels D, Levine C. Estimates of the Number of Motherless Youth Orphaned by AIDS in the United States. *JAMA* 268:3456-3461, 1992.
22. Zoloth S, Safyer S, Rosen J, Michaels D, Alcabes P, Bellin E. Anergy Compromises Screening for Tuberculosis in High Risk Populations. *Amer J Pub Health* 83:749-751, 1993.
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24. Michaels D. When Science Isn't Enough. Wilhelm Hueper, Robert A.M. Case and the Limits of Scientific Evidence in Preventing Occupational Bladder Cancer. *Int J Occup Environ Health* 1:278-288, 1995.
25. Michaels D. Fraud in the Workers' Compensation System. Origin and Magnitude. *Occupational Medicine State of the Art Reviews* 13:439-442, 1998.
26. Michaels D, Bingham E, Boden L, et al. Advice without Dissent. (editorial) *Science* 298:703, 2002.
27. Michaels D. Environmental Health Science and the Legacy of Popular Literature. *Environ Health Perspectives* 111:14-5, 2003.
28. Michaels D, Wagner W. Disclosure in Regulatory Science. *Science* 302:2073, 2003.
29. Wagner W, Michaels D. Equal Treatment for Regulatory Science. Extending the Controls Governing the Quality of Public Research to Private Research. *Amer J Law Med* 30:119-154, 2004.
30. Michaels D. *In Memoriam*. Thomas F. Mancuso, MD, MPH 1912-2004. *Amer J Ind Med*. 47:1-3, 2005. (Also published in *Eur J Oncol* 9:189-190, 2004.)
31. Michaels D. Scientific Evidence and Public Policy. (editorial) *Amer J Public Health* 95:Suppl1.S5, 2005.
32. Michaels D, Monforton C. Manufacturing Uncertainty. Contested Science and the Protection of the Public's Health and Environment. *Amer J Public Health* 95:Suppl1:S39-48, 2005.
33. Michaels D, Monforton C. Scientific Evidence in the Regulatory System: Manufacturing Uncertainty and the Demise of the Formal Regulatory System. *J Law Policy* 13(1): 17-41, 2005.

34. Dweck A, Lurie P, Michaels D, Wolfe S. Hexavalent Chromium Study's Conclusions Unjustified. (letter) *J Occup Environ Med.* 47:980-1, 2005.
35. Michaels D. Doubt is their Product. *Scientific American* 292:74-80, June 2005.
36. Michaels D, Monforton C, Lurie P. Selected Science: An Industry Campaign to Undermine an OSHA Hexavalent Chromium Standard. *Environmental Health* 5:5, 2006.
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39. Michaels D. Manufactured Uncertainty: Protecting Public Health in the Age of Contested Science and Product Defense. *Ann NY Acad Sci.* 1076:149-62, 2006.
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41. Michaels D, Monforton C. The Beryllium Occupational Exposure Limit: Historical Origin and Current Inadequacy. *J Occup Environ Med.* 48:998-1001, 2006.
42. Michaels D, Monforton C, Lurie P. Lung Cancer Mortality in the German Chromate Industry, 1958 to 1998. *J Occup Environ Med.* 48:995-7, 2006.
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44. Michaels D, Monforton C. How Litigation Shapes the Scientific Literature: Asbestos and Disease Among Automobile Mechanics. *J Law & Policy* 5(3):1137-1169, 2007.
45. Michaels D, Monforton C. Beryllium's Public Relations Problem. Protecting Workers When There Is No Safe Exposure Level. *Public Health Reports* 123:79-88, 2008. doi: 10.1177/003335490812300112
46. Michaels D. Addressing Conflict in Strategic Literature Reviews: Disclosure is not Enough. *J Epidemiol Comm Health.* 2009;63:599-600. doi: 10.1136/jech.2009.089524
47. Michaels D. OSHA Does Not Kill Jobs: It Helps Prevent Jobs from Killing Workers. *Amer J Ind Med* 55:961-963, 2012. doi: 10.1002/ajim.22122. Epub 2012 Sep 19.

48. Michaels D, Howard J. Review of the OSHA-NIOSH Response to the Deepwater Horizon Oil Spill: Protecting the Health and Safety of Cleanup Workers. PLOS Currents Disasters. 2012 Jul 18. doi: 10.1371/4fa83b7576b6e.
49. Michaels D, Burke T. The Dishonest HONEST Act. (editorial) Science 356:989 2017. DOI: 10.1126/science.aan5967
50. Gandhi TK, Kaplan GS, Leape L, et al. Transforming concepts in patient safety: a progress report. BMJ Quality & Safety. 2018;27(12):1019-1026. DOI: 10.1136/bmjqs-2017-007756
51. Michaels, D. Reimagining Our System for Public Health Protection. Amer J Public Health 109(7):975-976. 2019. DOI: 10.2105/AJPH.2019.305126
52. Michaels D, Barab J. OSHA at 50: Protecting Workers in a Changing Economy. Amer J Public Health (in press).

BOOKS, CHAPTERS, TRANSLATIONS, AND REPORTS

1. Michaels D. Minority Workers and Occupational Cancer. The Hidden Costs of Job Discrimination. In Behavior, Health Risks and Social Disadvantage. National Academy of Sciences Interim Report No. 6. Washington, DC. National Academy Press, 1982.
2. Michaels D, Zoloth S. Occupational Safety. Why Do Accidents Happen? Occ Health Nursing 30.12-16, 1982.
3. Michaels D, O'Leary K, Frumkin H. How to Determine the Hazard of a Substance. In Occupational Health. Recognizing and Preventing Work-Related Disease. Levy B and Wegman D, editors. Boston. Little, Brown and Company, 1983.
4. Michaels D, Zoloth S. Securite du Travail. Pourquoi les Accidents Arrivent-Ils? Histoire des Accidents du Travail (Nantes, France), 15.71-83, 1983.
5. Michaels D, Barrera C, Gacharna MG. Occupational Health and the Economic Development of Latin America. Multinational Monitor 9.11-13, 1984.
6. Michaels, D. Tackling Tight Building Syndrome. What Can Workers Do? In Human Aspects in Office Automation. Cohen BGF, editor. Amsterdam, The Netherlands; Elsevier Science Publishers, 1984.

7. Michaels D, Barrera C, Gacharna MG. O Desenvolvimento Economico e a Saude Ocupacional na America Latina. Novas Tendencias para a Saude Publica em Países Subdesenvolvidos. Revista Brasileira de Saude Ocupacional (Sao Paolo, Brazil), 13:7-14, 1985.
8. Michaels D, Barrera C, Gacharna MG. Occupational Health and the Economic Development of Latin America. In The Export of Hazards. Transnational Corporations and Environmental Control Issues. Ives J, editor. Boston. Routledge & Kegan, Paul, 1985.
9. Dubler NN (ed). Standards for Health Services in Correctional Institutions, 2nd Edition. (Contributed chapter "Occupational Health Services") Washington DC. American Public Health Association, 1986.
10. Michaels D. Remarks on the Role of the University. In Asbesto y Salud en America Latina. Mitastein M, editor. Mexico City. Pan American Health Organization, 1987.
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12. Michaels D, Zoloth S. How to Research the Toxic Effects of Chemical Substances. In Occupational Health. Recognizing and Preventing Work Related Disease (2nd Edition). Levy B and Wegman D, eds. Boston. Little, Brown and Co., 1988.
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15. Kaminsky M, Klitzman S, Michaels D. Health Profile of Cancer, Asthma and Childhood Lead Poisoning in Greenpoint/ Williamsburg. New York City Department of Health 1992.
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17. Michaels D. Colorfast Cancer. The Legacy of Corporate Malfeasance in the U.S. Dye Industry. In Toxic Circles. Workplace to Community. Sheehen HE and Weeden RP, editors. New Brunswick. Rutgers University Press 1993.
18. Michaels D, Levine C. The Youngest Survivors. Estimates of the Number of Motherless Youth Orphaned by AIDS in New York City. In A Death in the Family. Orphans of the HIV Epidemic. New York. United Hospital Fund 1993.
19. Michaels D. Projections of Motherless AIDS Orphans under 15 in Six Countries. In Action for Children Affected by AIDS. Programme Profiles and Lessons Learned. A Joint World Health Organization/United Nations Children's Fund Document. New York. UNICEF 1994.
20. Zoloth S, Michaels D. How to Research the Toxic Effects of Chemical Substances. In Occupational Health. Recognizing and Preventing Work-Related Disease (3rd Edition). Levy B and Wegman D, editors. Boston. Little, Brown and Company 1995.
21. Michaels D. ERISA - State Flexibility. In Winning Issues in Health Care Reform. A Report from the 1993-1994 RWJ Health Policy Fellows. Advances. The Newsletter of the Robert Wood Johnson Foundation 8(1):2, 1995.
22. Levine C, Michaels D, Back SD. Orphans of the HIV/AIDS Epidemic. Emerging Global Trends and Programmatic Responses. In AIDS and the World (2nd Edition). Mann J and Tarantola D, editors. New York. Oxford University Press 1996.
23. Michaels D. Estimated Number of Children and Adolescents Orphaned by Maternal HIV/AIDS in New York State. In Families in Crisis. A Report of the Working Committee in HIV Families and Children. New York. Federation of Protestant Welfare Agencies 1996.
24. Michaels D. Estimates of Motherless Youth in New Jersey. In Issues Affecting New Jersey's Orphans of the HIV Epidemic New Jersey AIDS Partnership 1997.
25. Forest W, Kubota C, Zoloth S, Michaels D, Cone J. How to Research the Effects of Chemical Substances or Other Workplace Hazards. In Occupational Health. Recognizing and Preventing Work-Related Disease (4th Edition). Levy B and Wegman D, editors. Philadelphia. Lippincott Williams and Wilkins 2000.
26. Michaels D. Regulatory Science. Does Peer Review Help or Hurt? In Rescuing Science from Politics. Regulation and the Distortion of Scientific Research. Wagner W and Steinzor S, editors. New York. Cambridge University Press 2006.

27. Michaels D. Manufactured Uncertainty. Contested Science and the Protection of the Public's Health and Environment. In Agnotology. The Making and Unmaking of Ignorance. Proctor RN and Schiebinger L, editors. Stanford. Stanford University Press 2008.
28. Michaels D. Doubt is Their Product. How Industry's War on Science Threatens Your Health. New York. Oxford University Press 2008.
29. Michaels D, Wagner GR. Work, Health, and Well-Being. In Environmental Health: From Global to Local. (3rd Edition). Frumkin H, ed. San Francisco. Jossey-Bass, 2016.
30. Michaels, D. Seven Ways to Improve Operations without Sacrificing Worker Safety. Harvard Business Review. March 21, 2018.
31. Michaels D. The Triumph of Doubt: Dark Money and the Science of Deception. New York. Oxford University Press 2020.

RECENT MAJOR NATIONAL AND GLOBAL LEADERSHIP POSITIONS

Federal Advisory Council on Occupational Safety and Health, Chair	2009-2017
Administrative Conference of the United States	
Government Member	2010-2017
Senior Member	2018-present
Emerging Technologies Interagency Policy Coordination Committee	2010-2012
National Science and Technology Council,	
Committee on Homeland and National Security	2010-2017
National Toxicology Program,	
Chair, Executive Committee	2011-2017
Member, Board of Scientific Counselors	2018-present
National Academy of Medicine Roundtable on Environmental Health Sciences,	
Research, and Medicine	2011-present
Global Reporting Initiative, Occupational Health & Safety Work Group Member	2017-2018
Lucian Leape Institute of the Institute for HealthCare Improvement/	
National Patient Safety Foundation Member	2017-present
Singapore Ministry of Manpower International Advisory Panel	2018-present

PEER REVIEWER

Journals:

AIDS

American Journal of Industrial Medicine

American Journal of Public Health

International Journal of Epidemiology

International Journal of Occupational and Environmental Health
Journal of the American Medical Association
Preventive Medicine (Editorial Board)
Public Health Reports
Science

Agencies and Institutions:

National Academy of Sciences/Institute of Medicine
National Center for Environmental Health/Agency for Toxic Substance and Disease Registry
National Institute for Occupational Safety and Health

INTERNATIONAL CONSULTANTSHIPS

Inter-American Center for the Study of Social Security (Mexico)
International Labour Organization
Marshall Islands Nuclear Claims Tribunal, Office of the Public Advocate
Ministry of Health and Institute of Social Security (Colombia)
Pan American Health Organization - Center for Human Ecology and Health (Mexico)
United Nations Centre on Transnational Corporations (New York)